

Question 1:

Polypharmacology is defined when:

- ☒ A drug has different targets

Explanation:

Polypharmacology describes the ability of an approved drug or a pharmaceutical molecule to act on multiple targets.

- ☐ A drug reaches different tissues
- ☐ Two drugs are used at the same time

Question 2:

A new indication as an antiviral occurs:

- ☐ new target - new virus
- ☒ same target - new virus

Explanation:

an antiviral drug that is known to target a specific viral or cellular function/pathway is found to possess activity against other viruses.

- ☐ new target - same indication

Question 3:

In antiviral drug repurposing which is NOT a followed strategy:

- ☐ Mechanism-based assay

☐ Phenotypic assay

☒ Genomic assay

Explanation:

DR screenings can mainly undertake two different experimental approaches: i) unknown target – phenotypic assay, or ii) known target – mechanism-based assay.

Question 4:

Which of these drug classes showed repurposing potential against ZIKA virus?

☐ Anti-psychotic

☒ Anti-malarial

Explanation:

Several antimalarial drugs showed anti-ZIKV activity. In particular, chloroquine was effective in reducing ZIKV vertical transmission in infected pregnant mice.

☐ Anti-hypertensive

Question 5:

What is NOT an issue in drug repurposing?

☐ Low potency

☐ Intellectual property, program restriction, and business issues

☒ Target identification

Explanation:

The identification and validation of the target (a protein, a pathway, etc., which sometimes can be deduced from the mechanism of action of the identified hit

compound) is required to demonstrate that the target is indeed essential for virus replication and/or pathogenesis and is subordinated to the demonstration that its modulation leads to protection from virus infection and inhibition of virus-associated pathogenic effects. Experimental approaches for antiviral target validation can be exemplified by genetic knockdown through RNA interference, gene editing by CRISPR/Cas9 system, mutational analysis, and the use of pharmacological inhibitors (if available). Finally, when possible, a clinical validation on patient-derived samples or data can also be performed.